

Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) **EP 0 970 755 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention  
of the grant of the patent:  
**05.03.2003 Bulletin 2003/10**

(51) Int Cl.7: **B05C 17/005**

(21) Application number: **99202221.0**

(22) Date of filing: **07.07.1999**

(54) **Dispenser head for distributing a viscous liquid**

Ausgabekopf zur Abgabe einer viskosen Flüssigkeit

Tête de distribution pour la distribution d'un liquide visqueux

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE**

(30) Priority: **10.07.1998 NL 1009608**

(43) Date of publication of application:  
**12.01.2000 Bulletin 2000/02**

(73) Proprietor: **Floor Alliance International B.V.**  
**7482 EW Haaksbergen (NL)**

(72) Inventor: **Kramer, Bertus Alexander**  
**1788 HJ Jullanadorp (NL)**

(56) References cited:  
**EP-A- 0 405 047 BE-A- 627 101**  
**DE-A- 2 529 498**

**EP 0 970 755 B1**

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

## Description

[0001] The invention relates to a dispenser head provided with an outlet opening and centring means, for dispensing a viscous liquid in a groove. The dispenser head is particularly suitable for dispensing for example glue before-making a tongue and groove joint.

[0002] A dispenser head of this type is known from e.g. EP-A-0 405 047.

[0003] Existing dispenser heads comprise in fact nothing more than a conically shaped nozzle that produces a bead of glue or another liquid in or alongside a groove in a side of for example a laminate floor board. The laminate floor board is next brought in position and then pressed or knocked in place, in a way well known in the art, in the process of which one hopes that the liquid will spread out and completely fill the space between the neighbouring laminate floor boards. This is of great importance because only the top layer of the laminate board has been impregnated. If there are chinks between the laminate floor boards then water may penetrate into these chinks, which causes the edges to raise. This is visually unattractive and it causes moreover excessive wear of these edges, which negatively influences the life of the floor. For a glued laminate floor it sometimes is important that bottom parts of the laminate floor boards are well filled with glue as well, because this increases significantly the strength of the joint and because one may walk the floor after a shorter drying time.

[0004] A laminate floor may be put in place without gluing the laminate boards mutually together. In that case the liquid is an impregnation means, for example a suitable oil or wax, which is distributed in the groove. Here as well one should fill the seam completely with impregnation means in order to prevent the adverse effects of moisture.

[0005] The object of the invention is to realize a desired distribution of liquid in and around the groove. This object is achieved according to the invention by the dispenser head as defined in claim 1, by the glue-bottle as defined in claim 5 and by the cap or glue-gun as defined in claim 6.

[0006] Particular embodiments of the invention are the subject of the dependent claims. According to the invention the dispenser head comprises dispensing means for dispensing the viscous liquid in the groove, that the centring means and the dispensing means are placed in line and both have a V-shaped cross section and that the outlet opening is situated between the centring means and the dispensing means. The centring means thereby guide the liquid exactly to the place where it is needed, while the dispensing means dispense the liquid before it will drip off.

[0007] From BE 627 101 a nozzle for a spraying ("Ajutage de pistolet pulvérisateur") is known, provided with guiding means, for filling up gaps between building elements. As these gaps should be filled-up completely,

the known dispenser is not provided with dispensing means.

[0008] From EP 0 405 047 a dispenser is known for filling up gaps, provided with guiding means for maintaining a predefined angle between an outlet opening of the dispenser and a surface to be treated.

[0009] From DE 25 29 498 a dispenser is known for filling for example a joint between two boards. This known dispenser is provided with guiding means for guiding an outlet opening through the joint and for maintaining a predefined angle between the outlet opening and the joints. As the joint preferably is filled-up completely, this known dispenser is not provided with dispensing means.

[0010] A favourable embodiment of the invention is characterized in that the centring means and the dispensing means have an at least substantially symmetrical cross section, such that the symmetrical tongue and groove joint can be completely treated with as little glue as possible.

[0011] A further favourable embodiment of the invention is characterized in that the centring means have an obtuse-angled V-shaped cross section and the dispensing means have an acute angled V-shaped cross section. Centring means shaped in this manner easily guide the dispenser head through the groove, while the acute angled dispensing means will go deeper into the groove and dispense the liquid.

[0012] An alternative favourable embodiment of the invention is characterized in that the dispenser head is provided with an asymmetrical shaped outlet opening. This creates a possibility for completely gluing the upper part of the tongue and groove joint while, for saving on glue, the lower part remains unglued.

[0013] The invention will now be further explained with reference to the following figures, in which:

- |            |   |
|------------|---|
| Fig. 1A    | shows a dispenser head according to the state of the art;                                 |
| Fig. 1B    | shows a bead of glue, obtained with this dispenser head;                                  |
| Fig. 1C    | shows a glued joint obtained with this dispenser head;                                    |
| Fig. 2A    | shows in front view a possible embodiment of a dispenser head according to the invention; |
| Fig. 2B    | shows in side view this embodiment of the dispenser head;                                 |
| Fig. 3A-7A | show a number of desired distributions of glue;   |
| Fig. 3B-7B | show the beads of glue necessary for obtaining these distributions;                       |
| Fig. 3C-7c | show in top view the corresponding dispenser heads;                                       |
| Fig. 8     | shows a glue-gun provided with a dispenser head according to the invention.               |

[0014] Fig. 1A shows a dispenser head 1 according

3

EP 0 970 755 B1

4

to the state of the art, where dispenser head 1 forms an integral part of a cap 2. Cap 2 forms the closure of a bottle 3 which contains glue or an impregnation means or another liquid 4. Bottle 3 is made of a flexible synthetic material and can be squeezed together, thereby forcing liquid 4 out of an opening 5.

[0015] Fig. 1B shows two laminate floor boards provided with a tongue 6 and a groove 7. More in particular Fig. 1B shows a bead of glue 8, obtained with dispenser head 1 according to the state of the art. Bead 8 is put on this location because it is of great importance that the joint made between two laminate floor boards is at least near the upper edge saturated with glue. If this is not the case then moisture may penetrate into the chinks between the laminate floor boards, which causes the edges to rise. If bead 8 is too thin than the joint made by the glue is of inferior quality; if bead 8 is too thick than the glue will run or drip off, which may also result in an inferior joint. Even with a perfect bead 8 it is necessary to place the laminate floor board within a few seconds, for preventing the glue to run off.

[0016] Fig. 1C shows a glued joint obtained by a dispenser head according to the state of the art if everything works perfect. Only in the upper part a glued joint 9 is obtained. With the dispenser head 1 according to the state of the art it is in fact impossible to obtain a complete glued joint of the tongue 6 and the groove 7. For some applications this means that the glued joint thus obtained is not strong enough.

[0017] Fig. 2A shows in front view a possible embodiment of a dispenser head 10 according to the invention. In this embodiment dispenser head 10 is integrated again with a cap 2, closing a bottle 3 filled with a liquid 4. Dispenser head 10 is made of a metal or a wear resistant synthetic material, like POM. In operation, dispenser head 10 is moved alongside a laminate floor board, during which a centring of dispenser head 10 takes place substantially by the front placed obtuse-angled V-shaped part 11, while liquid is pressed out via an outlet opening 12, which liquid is dispensed immediately in and alongside the groove by an acute-angled V-shaped part 13.

[0018] Fig. 2B shows in side view the dispenser head 10, again with the obtuse-angled V-shaped part 11 which provides for the centring in the groove, outlet opening 12 and the acute-angled V-shaped part 13, for dispensing the liquid leaving outlet opening 12 inside and alongside the groove.

[0019] An additional advantage of the inventive dispenser head is that outlet opening 12 is wide compared with the outlet opening of known dispenser heads. This implies that less force is needed for squeezing bottle 3 and that the occurrence of lower arm complaints connected with this type of movements is reduced.

[0020] Fig. 3A,4A,5A,6A,7A give some examples of different types of glue distributions 14 that can be obtained with the inventive dispenser head by selecting the shape of the outlet opening 12. Fig. 3B,4B,5B, 6B,7B

show how for these glue distributions 14 the glue beads 15 should be placed in and around groove 7. Fig. 3C, 4C,5C,6C,7C subsequently show how outlet opening 12 must be selected for realizing these glue beads 15.

[0021] Fig. 8 schematically shows a glue-gun provided with a dispenser head 10 according to the invention. In this case the glue is supplied under some pressure via a tube 17, which tube 17 is closed by a clamp 18a, 18b. With the aid of a trigger 19 the clamp half 18b can be pulled away, after which glue can escape via outlet opening 12 in dispenser head 10. Here too a desired glued joint or an impregnation is obtained thanks to the inventive shape of dispenser head 10. The advantage of using a glue-gun compared with a glue bottle is that it is much easier to produce a bead of glue with a constant thickness. Moreover injuries are prevented that may be caused by the repetitive squeezing of the bottle with glue or any other liquid.

#### Claims

1. Dispenser head (10) provided with an outlet opening (12) and centring means (11), for dispensing a viscous liquid in a groove, **characterized in that** the dispenser head (10) also comprises dispensing means (13) for dispensing the viscous liquid in the groove, that the centring means (11) and the dispensing means (13) are placed in line and both have a V-shaped cross section and that the outlet opening (12) is situated between the centring means (11) and the dispensing means (13).
2. Dispenser head (10) according to claim 1, **characterized in that** the centring means (11) and the dispensing means (13) have an at least substantially symmetrical cross section.
3. Dispenser head (10) according to claim 2, **characterized in that** the centring means (11) have an obtuse-angled V-shaped cross section and the dispensing means (13) have an acute angled V-shaped cross section.
4. Dispenser head (10) according to claim 2 or 3, **characterized in that** the dispenser head (10) is provided with an asymmetrical shaped outlet opening (12).
5. Glue-bottle (3), provided with a dispenser head (10) according to one of the claims 1 to 4.
6. Cap or glue-gun provided with a dispenser head (10) according to one of the claims 1 to 4.

5

EP 0 970 755 B1

6

### Patentansprüche

1. Verteilkopf (10), versehen mit einer Ausstromöffnung (12) und Zentriermitteln (11), für das Auftragen einer viskosen Flüssigkeit in eine Nut, **dadurch gekennzeichnet, dass** der Verteilkopf (10) gleichzeitig Verteilmittel (13) umfasst für das Verteilen der viskosen Flüssigkeit in der Nut, dass die Zentriermittel (11) und die Verteilmittel (13) in einer Linie liegen und beide einen V-förmigen Querschnitt haben, und dass sich die Ausströmöffnung (12) zwischen den Zentriermitteln (11) und den Verteilmitteln (13) befindet. 5
2. Verteilkopf (10) gemäß Anspruch 1, **dadurch gekennzeichnet, dass** die Zentriermittel (11) und die Verteilmittel (13) einen zumindest im Wesentlichen symmetrischen Querschnitt haben. 10
3. Verteilkopf (10) gemäß Anspruch 2, **dadurch gekennzeichnet, dass** die Zentriermittel (11) einen V-förmigen, stumpfwinkligen Querschnitt haben und die Verteilmittel (13) einen V-förmigen, spitzwinkligen Querschnitt haben. 20
4. Verteilkopf (10) gemäß dem Anspruch 2 oder 3, **dadurch gekennzeichnet, dass** der Verteilkopf (10) mit einer asymmetrisch geformten Ausströmöffnung (12) versehen ist. 25
5. Leimflakon (3), versehen mit einem Verteilkopf (10) gemäß einem der Ansprüche 1 bis einschließlich 4. 30
6. Kappe oder Leimpistole, versehen mit einem Verteilkopf (10) gemäß einem der Ansprüche 1 bis einschließlich 4. 35
3. Tête distributrice (10) selon la revendication 2, **caractérisée en ce que** les moyens de centrage (11) ont une section transversale en forme de V d'un angle obtus et les moyens de distribution (13) ont une section transversale en forme de V d'un angle aigu. 5
4. Tête distributrice (10) selon la revendication 2 ou 3, **caractérisée en ce que** la tête distributrice (10) présente une ouverture de sortie (12) d'une forme asymétrique. 10
5. Bouteille de colle (3) présentant une tête distributrice (10) selon l'une des revendications 1 à 4. 15
6. Capuchon ou pistolet de colle présentant une tête distributrice (10) selon l'une des revendications 1 à 4. 20

### Revendications

1. Tête distributrice (10) présentant une ouverture de sortie (12) et un moyen de centrage (11), pour distribuer un liquide visqueux dans une rainure, **caractérisée en ce que** la tête distributrice (10) comprend également un moyen de distribution (13) pour distribuer le liquide visqueux dans la rainure, que le moyen de centrage (11) et le moyen de distribution (13) sont placés en ligne et présentent tous les deux une section transversale en forme de V, et **en ce que** l'ouverture de sortie (12) est située entre le moyen de centrage (11) et le moyen de distribution (13). 40
2. Tête distributrice (10) selon la revendication 1, **caractérisée en ce que** le moyen de centrage (11) et le moyen de distribution (13) ont une section transversale au moins sensiblement symétrique. 45

EP 0 970 755 B1

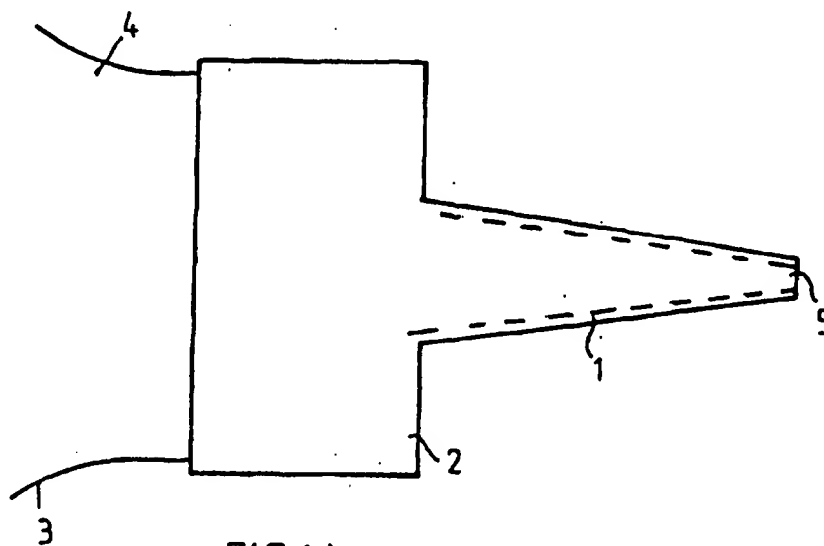


FIG. 1A

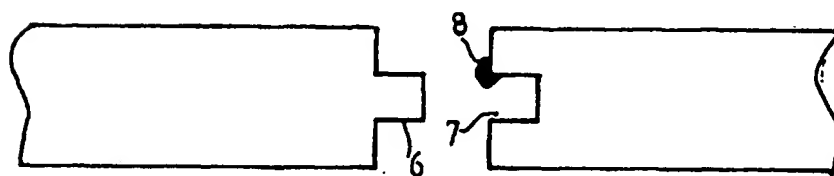


FIG. 1B

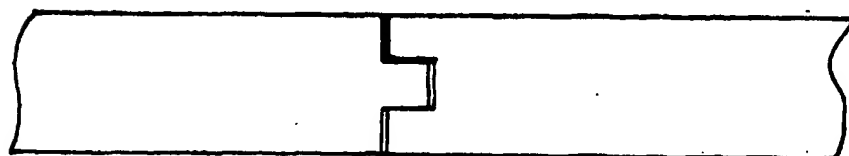


FIG. 1C

EP 0 970 755 B1

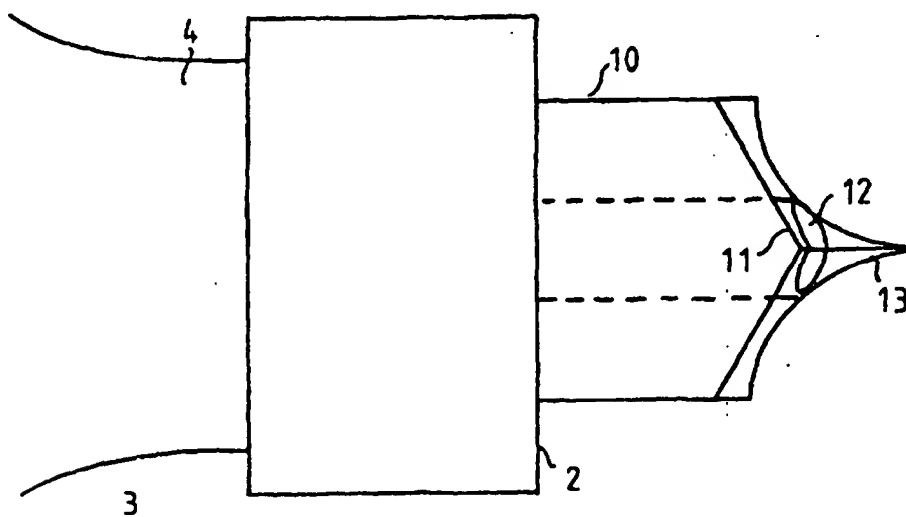


FIG. 2A

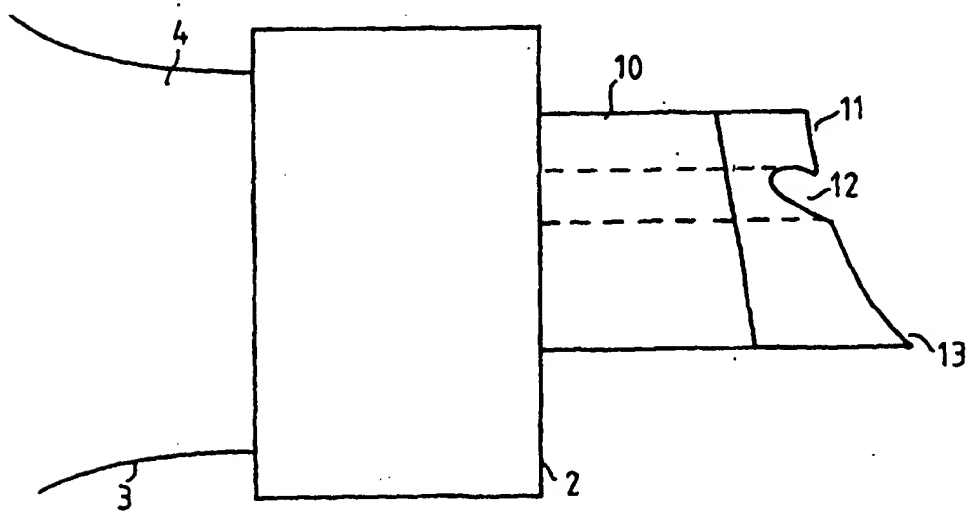


FIG. 2B

EP 0 970 755 B1



FIG. 3A

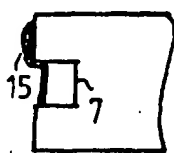


FIG. 3B

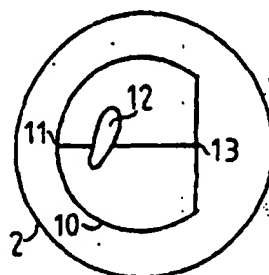


FIG. 3C

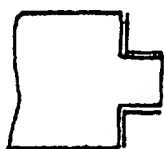


FIG. 4A

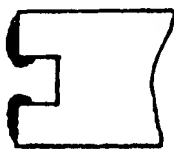


FIG. 4B

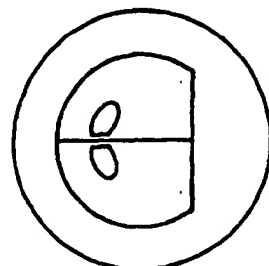


FIG. 4C

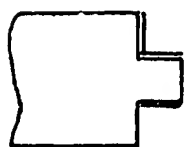


FIG. 5A

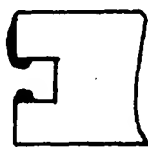


FIG. 5B

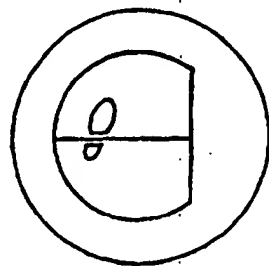


FIG. 5C

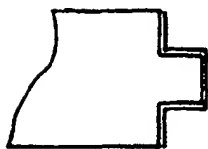


FIG. 6A

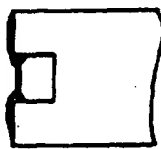


FIG. 6B

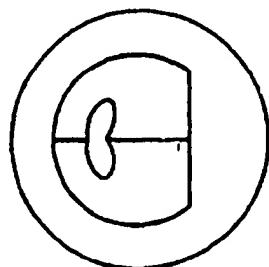


FIG. 6C

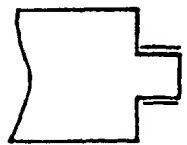


FIG. 7A

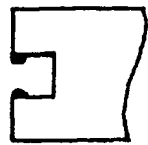


FIG. 7B

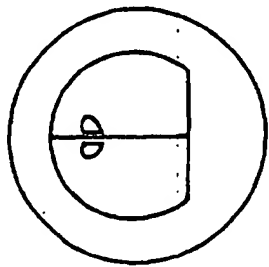


FIG. 7C

EP 0 970 755 B1

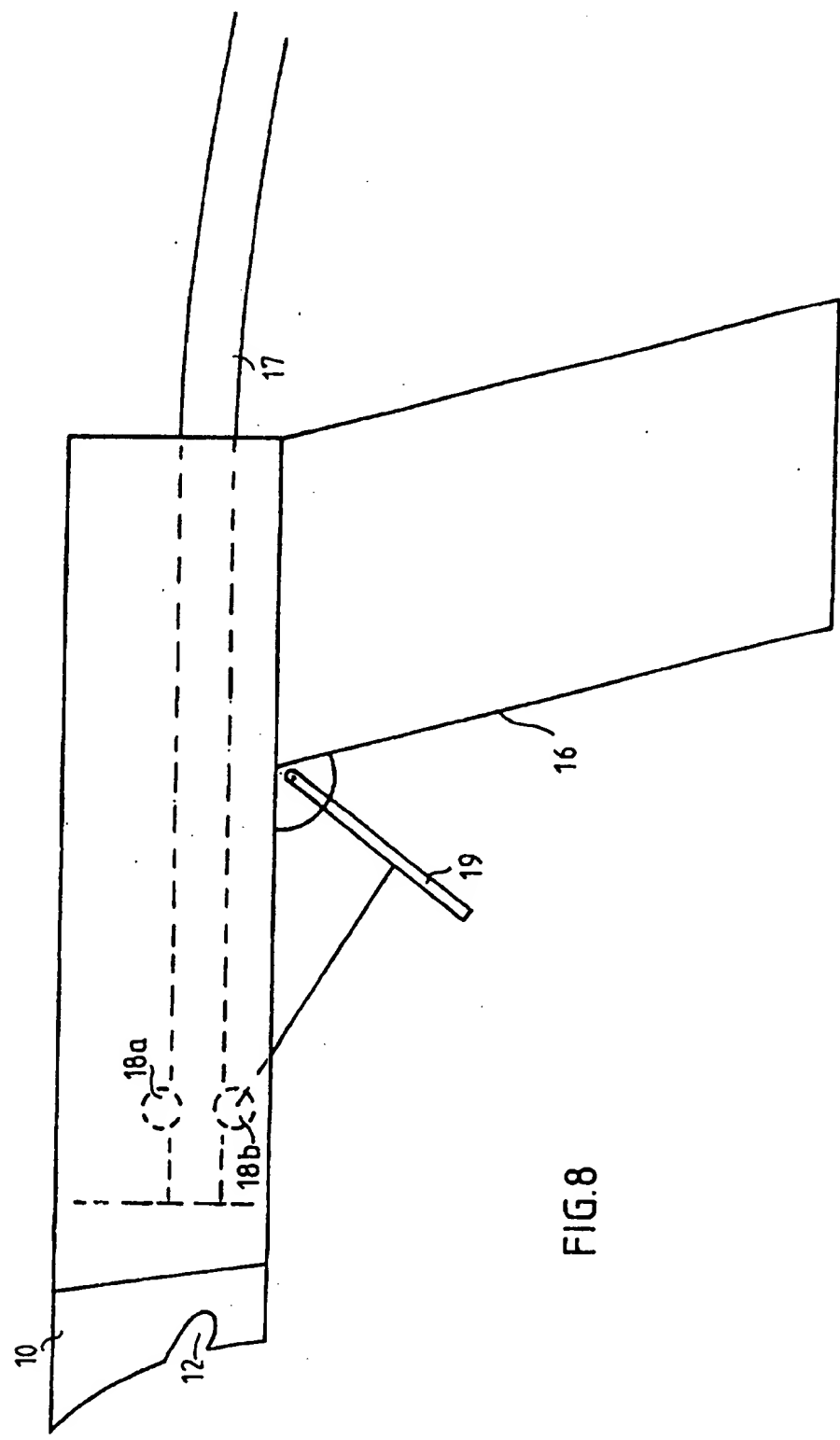


FIG.8